

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCTF195		FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/010917	International filing date (day/month/year) 30.07.2004	Priority date (day/month/year) 30.07.2003	
International Patent Classification (IPC) or national classification and IPC C08J5/04, B29B9/14, B29C45/00, C08L67/04 // C08L101/16, B29K67:00, B29K311:10			
Applicant MITSUBISHI PLASTICS, INC.			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following _____ which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p>
2.	<p>With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-17</u> _____ as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. <u>1-5, 11</u> _____ as originally filed/furnished</p> <p>nos.* _____ as amended (together with any statement) under Article 19</p> <p>nos.* _____ received by this Authority on _____</p> <p>nos.* _____ received by this Authority on _____</p> <p><input type="checkbox"/> the drawings:</p> <p>sheets _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p>
3.	<p><input checked="" type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input checked="" type="checkbox"/> the claims, nos. <u>6-10</u> _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>
4.	<p><input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted the claims nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
 - ☒ not complied with for the following reasons:

In claim 11, which is an independent claim, the ratio of L lactic acid and D lactic acid contained in a lactic acid resin, the quantity of cellulose and lignin contained in natural fibers, and the ratio of lactic acid resin and natural fibers contained are not specified. Therefore the injection molded body which is the target substance of production in claim 11 and the injection molded body of the invention set forth in claim 1 are not directly related to one another. Moreover, the configuration of the injection molded body with the composition specified in claim 1 and the configuration of the method of producing an injection molded body with the steps provided in claim 11 would not be acknowledged by a person skilled in the art to be closely related to one another at the time of filing of this application. Therefore the invention set forth in claims 1 to 5 and the invention set forth in claim 11 do not share a special technical feature
(Continued in Supplemental Box)

4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. _____

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-5, 11</u>	YES
	Claims	<u></u>	NO
Inventive step (IS)	Claims	<u>1-5</u>	YES
	Claims	<u>11</u>	NO
Industrial applicability (IA)	Claims	<u>1-5, 11</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2002-060502 A (Kobe Steel, Ltd.), 26
February 2002

Document 2: JP 2002-069303 A (Masaru O), 8 March 2002

Document 3: JP 2002-115173 A (Kobe Steel, Ltd.), 19 April
2002

Document 4: JP 2002-144329 A (Araco Corporation), 21 May
2002

The invention set forth in claims 1 to 5 is novel and involves an inventive step in relation to documents 1 to 4 cited in the international search report. Documents 1 to 4 set forth a feature wherein an injection-molded body using is formed using a resin composition containing natural fibers and a lactic acid resin. In addition, documents 1 and 3 set forth a feature wherein pellets are formed by impregnating yarn formed from natural fibers with resin, and said pellets are used in injection molding. However, these documents do not show the quantity ratio of L lactic acid and D lactic acid (L:D = 100:0 to 97:3 or 0:100 to 3:97), the quantity of cellulose and lignin contained in the natural fibers (40 to 60wt% of cellulose and 10 to 30wt% of lignin), and the ratio of lactic acid resin and natural fibers (99:1 to

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70:30) specified in claim 1 of this application.

Moreover, by specifying the aforementioned ratios, an improvement in heat resistance using the effect of promoting crystallization of resin by cellulose and lignin is achieved in the invention set forth in claims 1 to 5 without detriment to external appearance, as is evident in paragraph [0020] of the description and the embodiments, and at the same time, it is possible to suppress the drop in shock resistance caused by having the molded body contain excessive natural fibers.

Documents 1 to 4 neither disclose nor suggest this advantageous effect and the combination of said ingredients, and the invention is industrially applicable.

The invention set forth in claim 11 does not involve an inventive step in the light of documents 1 and 3 cited in the international search report. Documents 1 to 3 set forth a method wherein pellets are formed by impregnating yarn formed from natural fibers with resin, and said pellets are used in injecting molding. Here, it was common practice in said technical field at the time of filing of this application to use a mixture of a master batch containing additives and a resin material for diluting purposes when manufacturing pellets for molding or injection molded bodies. A person skilled in the art would therefore have been capable of adding a feature wherein lactic acid resin is added to the feature of production methods set forth in documents 1 and 3 as necessary. In addition, in claim 11, the weight ratios of ingredients contained in the injection molded bodies which are manufactured is not specified, therefore the

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molded bodies which are produced are not provided with an
advantageous effect of operation.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

(Continued from Box IV.3)

within the meaning of PCT Rule 13.2, and therefore cannot be considered as a group of inventions so linked as to form a single general inventive concept.